THE DANGER OF INFECTION ABOUT THE FACE

By J. William Hinton, M.D.
of New York, N. Y.
ADJUNCT ASSISTANT VISITING SURGEON, BELLEVUE HOSPITAL

The complications which small furuncles around the upper lip and nares may produce are not generally recognized. In active hospital services one sees one or two deaths yearly from maltreated face infections. The fatalities do not result from medical procrastination, but from overzealous surgical intervention. It is essential to have a clear conception of the mode of spread of infection about the face before intelligent treatment can be instituted. The danger of the infection is producing a thrombophlebitis of the facial vein, with a resulting cavernous sinus thrombosis. Thrombosis of the cavernous sinus is nearly always fatal. Figure 1 shows the distribution of the venous blood supply about the face, and one sees a direct connection from the facial vein to the cavernous sinus. There is one area marked in heavy outline about the upper lip and nares which is the critical area of face infections. According to Dixon,[1] the factors which produce serious complications in this locality are four. First, early and frequent trauma. Second, absence of subcutaneous fat on the upper lip. Third, active muscular supply of this region. Fourth, the inability of the veins that drain this region to collapse. The most important factor seems to be the rich venous plexus, both superior and deep in relation to the muscles of the upper lip. Trauma causes the thrombi to be spread to the facial veins, with resulting cavernous sinus thrombosis in a high per cent. of cases. The danger zone of infection about the face can be roughly outlined as the area between the hair line of the forehead above and the chin below, with two parallel lines connecting this area at the outer wall of the orbit on each side. As can be seen in Fig. 1, all of this area has a venous drainage connecting with the cavernous sinus. To get a clear conception of the venous return of the face, I will quote from Gray.[3] "There are some points about the facial vein which render it of great importance in surgery. It is not so flaccid as are most superficial veins, and, in consequence of this remains more patent when divided. It has, moreover, no valves. It communicates freely with the intracranial circulation, not only at its commencement by its tributes, the angular and supraorbital veins, communicating with the ophthalmic vein, a tributary of the cavernous sinus, but also by its deep tributaries, which communicates through the pterygoid plexus with the cavernous sinus by tributaries which pass through the foramen ovales and foramen lacerum medium. These facts have an important bearing upon the surgery of some diseases of the face, for on account of its patency the facial vein favors septic absorption, and therefore any phlegmonous inflammation of the face following a poisoned wound is liable to set up thrombosis in the facial vein, and detached portions of the clot may give rise to purulent foci

in other parts of the body. On account of its communications with the cerebral sinuses, these thrombi are apt to extend upward into them and so induce a fatal issue."

The Treatment.—Furuncles about the danger zone of the face should not be traumatized by squeezing or small incisions. Needless to say numerous

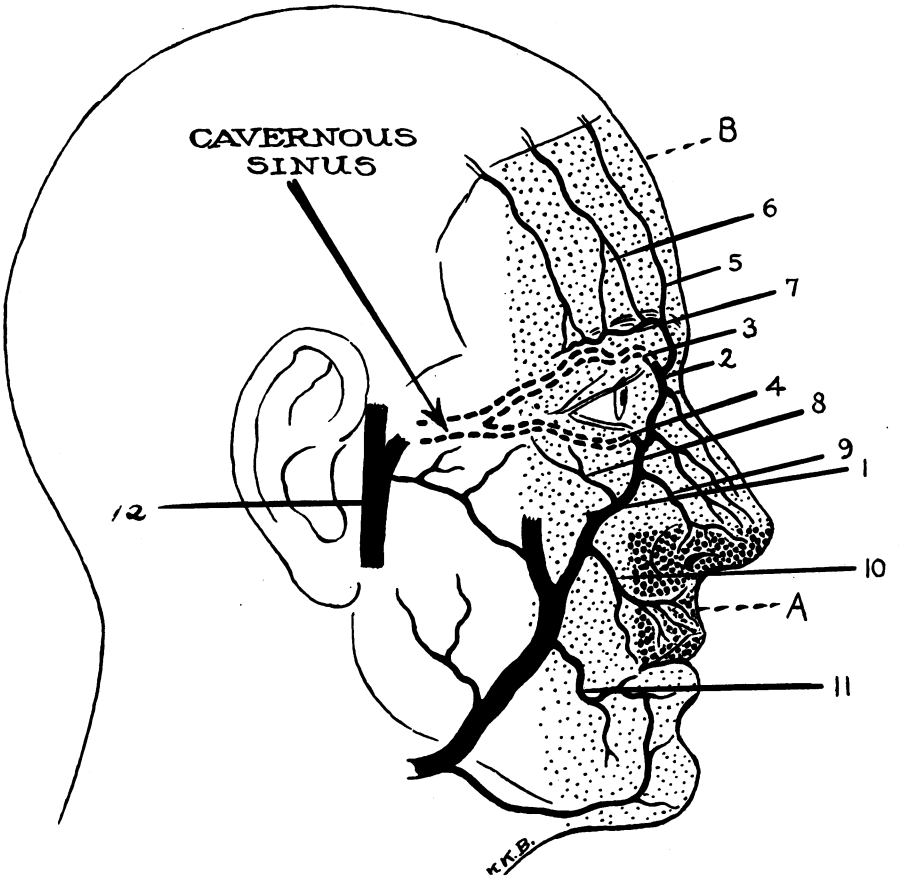

FIG. 1.—1. Anterior facial vein. 2. Angular vein. 3. Superior ophthalmic vein. 4. Inferior ophthalmic vein. 5. Frontal vein. 6. Supraorbital vein. 7. Superior palpebral vein. 8. Inferior palpebral vein. 9. Nasal vein. 10. Superior labial vein. 11. Inferior labial vein. 12. Temporal vein. *A*. Heavy dotted area around nose and upper lip is the "critical area" of face infections. *B*. Light dotted area is the danger zone for face infections.

furuncles about the face never lead to serious complications, but in those in which thrombosis of the cavernous sinus occur, the prognosis is fatal. Martin [2] states that every furuncle of the face and nose, and especially the upper lip, should be treated as if it might become a dangerous disease. It is best to treat all face infections conservatively. Heat is best used in the form of flaxseed poultices. This seems preferable to wet dressings. If the patient has chemosis, hot boric compresses may be applied to the eyes. The infection will usually localize with conservative treatment, and frequently will spontaneously perforate through the skin or mucous membrane, after which the

slough will be discharged through the opening. If the infection does not localize, an incision with a very sharp scalpel should be made, under general anæsthesia, without traumatizing the area. The wound should not be packed with gauze; but a rubber drain to hold the edges apart is all that is necessary. Hot poultices should be applied after the incision has been made. If the infection leads to a cavernous sinus thrombosis with meningitis, the only treatment that can be rendered is supportive measures.

CONCLUSIONS

1. Infections about the upper lip and nares will lead to cavernous sinus thrombosis in a certain per cent. of instances.

2. Trauma should be avoided in the beginning infection, particularly small incisions.

REFERENCES

[1] Dixon, O. Jason: The Pathologic Examination in Cavernous Sinus Thrombosis. Jour. A. M. A., October 2, 1926.

[2] Martin: ANNALS OF SURGERY, July, 1922, vol. lxxvi, No. 1.

[3] Gray's Anatomy. Eighteenth Edition.